

MODULAR MOTION UNIT WITH TENSIONER

Abstract of the Disclosure

A precision positioning device, such as a robot, decouples the different axes of motion by utilizing a modular motion unit for each different axis of motion. Each modular motion unit includes a base structure, a linear guide, a carriage, a drive motor, and a cable to convert the torque of the drive motor into useful, controlled carriage movement. The parts and sub-assemblies of each modular motion unit are interchangeable without concern about the ultimate orientation of the unit. To assemble the units into a robot, the modular motion units are attached to an underlying frame structure to provide computer-controlled movement over a designated physical work space. Re-tensioning of a drive cable within the modular motion unit is accomplished without requiring the operator to have special training or tools. One end of the drive cable is attached to a tensioner that is releasably locked into place. When the tensioner is released, a spring operates to move the tensioner, and the cable, to a properly tensioned position.